Final Meeting Notes: Community Advisory Group (CAG)
Aerojet Rocketdyne Superfund Site Issues
Meeting Date: January 18, 2017

1. Introductions and Attendees

Janis Heple, CAG Chair, began the meeting with introductions.

Attendees:

- Alex MacDonald, RWQCB
- Allen Quynn, City of Rancho Cordova
- Bryan Rinde, Golden State Water Company
- Charles O'Neill, HDR (Contractor)
- Chris Fennessy, Aerojet Rocketdyne
- Daewon Rojas-Mickelson, U.S. EPA
- Derek Jacks, Sacramento County Environmental Management
- Jackie Lane, U.S. EPA
- Janis Heple, CAG Chair
- Jim Rohrer, Department of Toxic Substances Control (DTSC)
- Jimmy Spearow, Community Member
- Julie Santiago-Ocasio, U.S. EPA
- Kevin Thomas, Sacramento Suburban Water District
- Lynn Keller, U.S. EPA
- Stephen Green, SARA
- Tammy Teurn, HDR (Contractor)
- Wayne Praskins, U.S. EPA

Note: A list of abbreviations and acronyms used on this project are provided on the last page.

Draft Meeting Notes from November 16, 2016

- No edits. Minutes are finalized.

2. Aerojet Community Updates – Chris Fennessy, Aerojet

- Aerojet Rocketdyne (Aerojet) sent two notices to community members over past week:
  - First: Standard drilling notice that Aerojet will install another monitoring well
  - Second: A notice regarding soil vapor investigation in eastern end of Gold River tentatively set for week of 1/23/17.

What type of geographic spread did you use for the soil vapor investigation notice?
C. Fennessy: Aerojet's requirement is 500 ft. around the location so we included communities to the north and south of Gold Country Blvd. (the first non-gated community to the north of Gold Country Blvd. and the first non-gated community on the south side). We included that entire community because there's going to be a location right in front of the entrance. The total mailing for the residential area ended up being over 450 notices. The work on the south side of the Folsom South Canal includes apartment complexes and businesses, which will require another 300-400 notices. Investigation will take a couple weeks in each area.

Will you be doing any in-home readings?
C. Fennessy: Not at this point. The need for in-home readings will depend upon the soil gas investigation results.

You're not going to be collecting soil gas samples in this rainy weather, correct?
C. Fennessy: We're required to get it done by the end of February.
L. Keller: The rain wasn't ideal, but we wanted to get it done while the winter heating season is going. We're taking advantage of that so if we have to do indoor sampling, we'll get it done in the worst case.
A. MacDonald: Plus, they're doing it all in the streets/paved areas where infiltration is expected to be minimal.

With all the groundwater from the rain, how representative will the data be? I know the DTSC has a recommendation that the vapor intrusion sampling not be considered around rainfall events. I understand the need to get it done soon, but the rainfall could potentially impact the results.
L. Keller: I'll make note of that. We're working closely with a toxicologist on this and didn't know the dates for sure because C. Fennessy was working on the permits and we're targeting for the week of 1/23/17 or 1/30/17. We'll talk to the experts and make sure they consider that as we want to get a representative reading as well.

What type of person would make the assessment around the potential to get good readings after it rains (probably not a toxicologist)?
L. Keller: We have Mat Plate on EPA's team who's the vapor intrusion (VI) expert for Region 9 and most of the nation. Mat has been involved since the inception so he probably has the best opinion of anybody. He coordinates with the entire VI core team—Region 9 and national group. We can vet it out further if you still want more reassurance that we're doing it correctly. Mat also does the quality assurance (QA) reviews for most of the soil vapor investigations as well.

Is DTSC's toxicologist still out on maternity leave and is she on the site still or did it get a new one?
J. Rohrer: I think she's back part time and hope she's still on the site.
L. Keller: We can have her talk with the EPA's toxicologist Dan Stralka, so they're on the same page.

3. EPA Updates – Julie Santiago-Ocasio & Lynn Keller, EPA

- J. Santiago-Ocasio's last meeting. B. Arthur who attended November meeting was supposed to take over, but she accepted a new job in Seattle two weeks ago.
- In lieu of changes, W. Praskins and D. Rojas-Mickelson are the new Project Managers for Operable Unit 3 (OU-3), Operable Unit 5 (OU-5) and some other parts.
    - D. Rojas-Mickelson: with EPA's San Francisco office for five years.
    - W. Praskins: with EPA's Superfund Program for over 30 years and managed five sites all in southern California, including the old Aerojet site before Rancho Cordova. Will work with D. Rojas-Mickelson to help with transition.
- Most of work done during past couple of months has been busy with vapor intrusion (VI) issues.
- Meeting on groundwater was held not long ago with Aerojet and another meeting is scheduled for next month. Other than VI, this is the most important issue EPA is covering right now.

- Annual Groundwater Summit scheduled for Monday, 1/23 and then second part in March.

Will you be involved in the meeting on Monday?
J. Santiago-Ocasio: I plan on attending.

Are you guys (D. Rojas-Mickelson & W. Praskins) assigned to the Operable Units (OUs) that J. Santiago-Ocasio was going to work on?
D. Rojas-Mickelson: Yes, I'm going to take over J. Santiago-Ocasio's portion of the project and W. Praskins will assist as technical advisor on an as needed basis.
J. Santiago-Ocasio: Mainly OU-3 and OU-5. Lynn will continue with OU-7, Area 40 and Vapor Intrusion.

Who's handling OU-6?
J. Santiago-Ocasio: That's going to be D. Rojas-Mickelson's as well.

Julie, you previously mentioned you'd have a list by this meeting of the types of things that have to be put in place on OU-6.
J. Santiago-Ocasio: I'm still working on it. Unfortunately OU-6 is behind and some of the issues that we need to look at have a lot of VI evaluation work to be done.

What about the idea of Area 40 being handled by DTSC and Water Board? Where is that now?
L. Keller: As of now, that's still the plan but what we agreed to is after the remedial investigation (RI) concludes, we'll do a joint Remedial Action Plan (RAP) in conjunction with an EPA Record of Decision (ROD) and then at that point we'll call it OU-10 and transfer to the State but there's a lot of EPA oversight.

Has anything been happening with that area?
L. Keller: Aerojet produced the Draft Feasibility Study (FS), which we're still reviewing but we want to reevaluate the Vapor Intrusion (VI) issues in regards to that to ensure ambient air isn't a concern. Essentially VI impacts all of the OUs until we're sure it's ruled out.

C. Fennessy mentioned he updated the table on backside of map (changes are highlighted in yellow box).

Last time we talked about the map, EPA stated they didn't have the files. How was this worked out?
J. Santiago-Ocasio: This is the same map, but C. Fennessy updated the backside. It'll take time to recreate a new map and I'm not sure if EPA will do it or if Aerojet can do it.
C. Fennessy: We might be willing to do it, but EPA needs to approve the depiction of the extent of chemical impact so it might be easier for EPA to do it the way they'd like to see it.
J. Santiago-Ocasio: This map was originally produced by Sullivan (who has since gone bankrupt). We may assign EA to reproduce a new map as part of community relations.

4. Vapor Intrusion Investigation (Onsite and Offsite) – Lynn Keller, EPA & Chris Fennessy, Aerojet

L. Keller: Aerojet has really stepped up to the plate. EPA had a Five-Year Review (FYR) due on September 30 and one of the findings was to redo the vapor intrusion (VI) studies in accordance with new guidelines produced in 2015, which changed VI evaluation. New guidelines rely on multiple lines of evidence and a parallel data approach. When Aerojet originally did the vapor intrusion assessment, the old EPA guidelines were followed. Now we have new information about better ways to evaluate VI.

EPA started meetings in late November and jumped right into VI with a plan of action and got a toxicologist involved (Dan Stralka who came to November CAG meeting). D. Stralka can come back, if interested, maybe in March or May when there's more solid data.

M. Plate is our vapor intrusion expert with nationwide experience so we're lucky to have him. C. Fennessy has been organizing building inspections with the EPA team, contractors, Aerojet and some of the tenants' onsite including building walkthroughs, figuring out how the heating ventilation air conditioning (HVAC) system is working and where to take samples, screening and next steps.

EPA is developing an approach starting with the worst site first. We know where groundwater contamination is and where we think worst impacts might be (obviously main part of plume is in middle of Aerojet). There are occupied buildings located within OU-7, OU-8 & OU-9 so we prioritized buildings with our toxicologist and M. Plate to rank everything we wanted Aerojet to look at first and tiered the system with Aerojet's agreement.

We started with worst sites and went through buildings to sample with HVAC on and HVAC off and also sub slab sampling. Community portion was second tier.

We conducted a risk-based tiered ranking and everything EPA recommended Aerojet has graciously done. We're very happy Aerojet is being cooperative and C. Fennessy is being patient with the process. It's not a prescribed process as everything is site dependent, which is why we can't provide an exact timeline because we find out day-to-day as we get results back. We started with worst site first, which was onsite facility sampling so we're looking at Aerojet's own facilities where we have people there and there's a groundwater plume underneath or source site nearby.

We have old soil vapor data that's anywhere from 3-20 years old. Most of our efforts are based on 1) where we know the plume is, 2) where we reasonably expect vapor intrusion (based on depth) and 3) what's going on in the building. The first tier was onsite structures at Aerojet, second tier is a few other buildings on Aerojet and surrounding communities because they're further off plume and third tier we're still determining (depends on second tier outcome). Aerojet is trying to get everything done by end of February.

The Five Year Review (FYR) triggered the old soil vapor evaluation, as old guidance is not adequate enough to evaluate potential risk according to the new guidance. We need to relook at some of these things to ensure they're protective onsite and offsite at Aerojet. EPA came up with

a structure to evaluate the worst sites first then go down the line because there are many buildings and homes. Aerojet has been great and agreed to do everything asked. EPA has been working close with Aerojet since late November to develop a plan of action for each building where each sample goes, what is found and where we go from there.

How many buildings have you sampled at this point?
L. Keller: We're doing screening samples first if the buildings are enormous.

What's a screening sample?
C. Fennessy: There's two types of samples conducted. First, a "grab sample," essentially a 2-inch diameter syringe that draws air into it as you extract the plunger. The syringe is closed to capture the air sample. You then take it to a mobile laboratory to analyze it. The analysis takes about 10 minutes. It gives us a really good idea quickly of whether or not there are chemicals in the indoor air. If we find chemicals in the space, we can use the same technique to identify or pinpoint where problems are coming from.
J. Rohrer: So from there, assuming the canister might have highest chlorinated solvent concentration, samples are collected over time in 8 hours where the vapors are drawn into the canister very slowly and regulated.

When L. Keller used the term "screening sample", you used the term "grab sample" which is actually the same thing?
C. Fennessy: That's correct. There are around 160 buildings including AMPAC and all of Aerojet's trailers, etc. Some buildings have 30 samples within the one building. EPA prioritized it to target buildings that had the most employees. Our administration area has tenants and there are probably 2,500 employees there out of 3,500 employees in Aerojet's facilities. AMPAC has another 300-400 and the rest are scattered throughout the facility. The admin area has the greatest density of employees, so those are the first buildings EPA wanted to sample.
J. Santiago-Ocasio: As a footnote, the administrative buildings are within OU-6.
C. Fennessy: That's right. We've done grab sampling in just about every Aerojet building that is still available for occupancy. It had to be in a location where there's a work bench where employees are traditionally working in the space for the majority of the day. Aerojet is undergoing a continuous improvement program to closeout buildings that are no longer in use. As we've gone around the campus, we've seen there are multiple buildings that are boarded out, not available, condemned or have been torn down.

This map is for separate soil vapor samples? At what depths do you know?
C. Fennessy: Yes, 10 to 20 ft. below ground. Area we're still working on is AMPAC. We're working closely with their environmental group who's been really helpful and we have another meeting with them on 1/19/17. AMPAC produces chemicals and they use a lot of solvents so we want to ensure the investigations are done correctly so that we don't get interferences or heightened awareness about chemicals they're using. We hope to do their building sampling next week. We completed grab sampling of their admin area and trailers where the majority of their workers' offices are located. On a global scale, we really haven't seen very many concentrations above EPA's screening levels in grab samples or canisters we've collected to date. I don't know if you would say it's correlating well with previous modeling efforts that's been done, but we haven't seen too many issues yet.

Did part of this occur because of the change in the regulations or all because of the guidelines?
L. Keller: Yes, the guidelines have stricter requirements to test for better ways to determine if something is there. Some of these soil gas samples we're using are 20 years old. In theory, the plume has moved or degraded a bit so hopefully what we're seeing now is better than what we've seen 20 years ago but we have better testing methods to prove that.

Sounds like you've done lot of onsite work. Has there been any offsite?
C. Fennessy: Not beyond selecting locations. We went out on 1/16/17 to mark the ground where sample locations are going to be. Working with Sacramento County to obtain drilling permit and got traffic control contractors on board. Locations are on Gold Country Blvd., which is a busy street with one lane each direction including a wide shoulder and bike trail. We don't think we'll need traffic control, but we have lots of cones and signage. Hope to get through permitting requirements and start the week of 1/23/17 and be complete by 2/3/17. Process is to drill down and set soil vapor locations then let those sit for two days to equilibrate then come back and sample. We'll have two teams to expedite process. First team will drill and set soil vapor points then second team will follow up two days later to collect soil vapor sample and abandon points. Much work to complete by the end of February. Challenge is trying to get HVAC off and those samples completed, where you have to turn entire building system off in the middle of winter and sample. Can't be done during work hours because we need 24-36 hours of off time before sampling. Trying to target weekends where Aerojet has Fridays off so we can turn system off on Thursday and sample on Sunday (10 hours long sample). Based upon schedule and what we see, may be able to get first part complete by end of February. EPA would like Aerojet to do a summer event so we have to work with EPA to scope that out based upon winter sampling results. Might be similar event, but since we've been through it, we'll know the contacts for each building and have the process down so we may be able to complete it quicker.

When you have a lot of rain, you can get the voids in the soil filled with water as opposed to having vapor released into it. I think that's a concern that you can have water coming from the rain filling it there so you could change the vapor release and detection characteristics that would not only affect soil vapor, but also vapor intrusion in indoor air. Those are the concerns so I'd definitely have your toxicologist look at that as we'll be getting more rain next few days.
L. Keller: We'll talk with them. They're intimately involved and know how the weather has been. In fact we have a call on 1/19/17 at 2pm.
C. Fennessy: To give everyone as much comfort as we can, we have nationwide experts on this project with Rob Ettinger of the Johnson & Ettinger model; Blayne Hartman who's been doing soil vapor and training sessions for the last 15 years; Bill Morris who is an expert on sub slab depressurization systems; and Mat Plate of EPA.

We just had the highest rainfall in the last couple of weeks that we've had in a long time (in years and years) and we're expecting more.
C. Fennessy: We'll definitely look at that.
A. MacDonald: One thing you've got to consider, we're looking at off-gas above water not soil vapor source areas, which makes a big difference on taking soil vapor samples, in the conclusions you're going to reach because now we're looking at below paved surfaces.

The infiltration of rainfall into the subsurface is not going to go down 10-20 ft. at this point in time. It takes a while for moisture to migrate especially down to 20ft. If we're looking at off-gassing of the groundwater, that's the first impact you're going to see so I'm not as concerned with the soil vapor samples being collected in the Gold River paved street surface areas versus if you're looking over unpaved areas on Aerojet where you do have a lot more infiltration and higher infiltration rates.

Is this type of thing happening all over the country?
L. Keller: It is, but mainly in the last five or so years.
J. Santiago-Ocasio: For some reason I don't think the eastern U.S. has been affected as much, but everywhere there's trichloroethylene (TCE), vapor intrusion (VI) is the issue and one of the topics that everyone is discussing.

Is it hard for everyone to screech to a halt, change gears and focus on this?
J. Santiago-Ocasio: It is; it's quite intense.

5. Regional Board Aerojet Cleanup Overview – Alex MacDonald, RWQCB
Note: A schedule and map were distributed.

- With soil VI evaluations ongoing, not a whole lot else has been occurring.
- Since last meeting, none of groundwater extraction and treatment (GET) systems have changed. Still operating same way, no additions have gone in.
- New monitoring wells: completed all monitoring wells planned for 2016 except for one.
- Yellow diamonds w/black dot: completed wells.
- Pink diamonds: needs to be produced (three left to be done).
    - Pink diamond near GET LB will go in next week (drilling notice C. Fennessy previously mentioned). In layer D where Aerojet wants to put 1-2 extraction wells to complete capture of NDMA plume. After well is complete, data will be analyzed to determine whether well above GET LB will get placed on north or south side of river. Depending on results and data gathered, we'll place final well and select where extraction well will be located.
    - Other well being completed on Deerwood Court in Fair Oaks right above 1156 on map. Well is to complete layers D & E in area to capture plume movements. Well has been waiting for a while (low on priority list). Already have monitoring wells sitting there for layers B & C.
- Found low concentrations of perflourinated compounds (PFCs) at GET EF and GET AB on last sample. Aerojet then sampled all GET systems across property on and off sites (about 70 samples) showing trace levels of concentrations. Aerojet and Water Board will create a longer range sampling program to periodically sample some of compounds to ensure no variability in data and PFCs at levels of concern.
- Western Groundwater: Aspen Grove Mobile Home Park has own supply well and trace levels of perchlorate so Aerojet proactively suggested to hook them up to California American Water, which they agreed. Aerojet has done all of the engineering work and gone to bid to put Aspen Grove on city water. Goal is to have them hooked up before summer.
- Boundary OU and Island OU: No changes. Still looking at Area 40 Final RI/FS, which is under EPA review.

- AMPAC: Located at ARGET on map. Manufactures chemicals and are changing operations by expanding facility and adding new processes and chiller pads. AMPAC is in one of the source areas of Aerojet so they have to go out and sample to ensure that it's safe to add a chiller pad or new building. If they excavate soil, they'll have to handle it in a certain manner so workers aren't exposed unnecessarily during excavation. AMPAC is working on three facilities:
    - New building and chiller pad: Soil excavation has been completed and site is ready for construction.
    - Fire containment impoundment: To store water for containment pond and ensure area isn't contaminated.
    - Another facility (location used to have an underground storage tank): Since on Aerojet property, under Partial Consent Decree (PCD), Aerojet has to notify Water Board whenever they want to do this type of work.
- Landfill: Hasn't moved or been proposed to move, but Aerojet started discussions to potentially move it this year.
- IRCTS: Two new extraction wells were installed at Sunrise Blvd. close to Douglas Rd. New piping will be installed in next couple of months to take water back to treatment plant. Found significant amounts of PFCs in extraction well 5 (EX5) located on west side of Mather Field near air force injection system. Part of their GET system is capturing areas where they have firefighting training facility and at the end of the runway where they had to put out fires over the years. They used quite a bit of firefighting foam which is where the PFCs come from. They've treated and removed VOCs (air stripping), injected water back in the ground with PFCs in them. EX5 is within a quarter mile of injection field and California American Water is about a quarter mile from plume.

This is GET EF?
A. MacDonald: No, it's not. If you look on the map, it's GET HB (far south in Mather Field).

Is it caused by the IRCTS?
A. MacDonald: No, it's caused by the Air Force, which has a plan to get treatment on their system. But we don't know when that'll occur, maybe a year or two from now.

You'll be seeing PFCs around the country. It's more toxic and does not biodegrade. The only known way to get rid of them is adsorption method then incinerate, which will destroy the chemical.

The original well it was found at was one of the GET EF wells?
A. MacDonald: No, original well is on Mather Field itself. If you recall, there's a plume of perchlorate coming off the Inactive Rancho Cordova Test Site (IRCTS) westerly underneath Sunrise Blvd. onto Mather Field at about 300-450 ft. in depth. This is at GET HB (think of it as GET HB: B for Boeing and GET HA: A for Aerojet). Their systems are right next to each other where they share the same lot and discharge point, but extraction wells are all associated with the IRCTS contamination so it's not part of the superfund site. It's in an area where the potential for PFCs is there, so it's not unexpected that we found it. Versus Aerojet, with the low concentrations we see, still not sure why they're there.

So it did actually come from the IRCTS?
A. MacDonald: No, the extraction wells are for the IRCTS. Just happens that one of the extraction wells is adjacent to the Air Force injection field. I don't know how big their plume goes, but they've been injecting for a number of years. They don't have any idea how big their PFC plume is.

In the material they were injecting, was it absorbed through activated charcoal and treated somehow?
A. MacDonald: The Air Force treatment plant is air stripping. When you have a high volume of water and/or higher concentrations, it's much cheaper to do that than to use carbon. They weren't looking for them or suspecting them.

So how is that working with it being done by the IRCTS but yet it's generated by Mather Air Force?
A. MacDonald: Mather Air Force is responsible for its plume, wherever it goes. If it requires GET HB to install treatment systems and allow them to discharge that water continuously to the creek like they're doing now, then the Air Force would probably be on the hook to pay for that treatment.

Is the extraction well at GET LB going after a different layer?
A. MacDonald: Yes, there's NDMA in this particular location in layers C and D. The extraction well at GET HB is screened in C and D, but only in the upper part of D. Layer D is basically a nice wedge of sand going through so we need to determine at what depths is NDMA happening to reside within layer D then screen the extraction wells to capture the existing layer. Right now it's capturing everything that's going by. When they put the extraction wells in, there might have already been NDMA past that point to start with.

You had mentioned three new monitoring wells at GET LB?
A. MacDonald: Yes, all yellow boxes are drilled and pink boxes will be drilled next. From that, they're hoping to have enough information to determine where to put these extraction wells. If you know the area, putting extraction wells out there isn't easy. Need to ensure you get it right because not only are you putting in an extraction well, you're putting in a pipeline from that extraction well to the treatment plant. The utility corridors are either small or don't exist so you don't want to make mistakes.

They're piping that one into the other one?
A. MacDonald: My estimate is they'll probably pipe it into GET LB.

Back to Mather, are they going to create a CAG out there?
A. MacDonald: They have one, but it's called RAB (Remedial Advisory Board). I think they might've gotten rid of it, but they're doing soil vapor sampling in the buildings there too.

Haven't they turned a lot of that over to the County?
A. MacDonald: Most of it has been turned over to the County. I think the County pays $1/year lease for the property.

How much work is the Water Boards doing there in terms of looking at the VI issues?
A. MacDonald: I'm not the project manager, but so far in our area Aerojet is the first one on the block going through the guidance documents and using the new methods. They have not done that at McClellan or Mather yet. As we go through this process, it might get further refined.

Schedule changes on back of map:

- Removed 2015 and added 2021, which extended next steps further out including 2021 Five Year Review (FYR)
- Added row at bottom to include vapor intrusion (V)I project
- Area 40 Risk Assessment and Feasibility Study in 2017. Unilateral Administrative Order (UAO) for OU-6 hasn't been received, but put date down for EPA (to be complete by end of February to resume on other things).

Do you see the report coming out after summer or earlier than that?
C. Fennessy: Anticipate it'll be between the two VI events (probably in the spring or early summer). We're gathering data continuously as we get it. The draft sampling plan has been written and most of the approach has already been written, we just need to document the results of the field investigations.

That'll be released to everybody and the community?
C. Fennessy: Yes.

Is DTSC involved in this process?
J. Rohrer: Yes, on the outskirts.

Alex, you're involved too?
A. MacDonald: Somewhat. I went to the Gold River Community Board Meeting last week and provided an update before they received the notice. They had no concerns.

Has the boundaries on the map changed since the last map?
A. MacDonald: I didn't create the map, but it hasn't changed very much. Maybe a pencil width if not more. We get the maps several times a year so it does get updated.

At which point would it be worthwhile to update the map to show a change?
A. MacDonald: Usually once a year not because the plume has moved (doesn't move that fast) but because new monitoring wells have gone in and it gives us a new data point that changes the configuration. Map includes all layers squished into one.

J. Heple provided a briefing on CAG to update Wayne and Daewon: Began meeting in 2001. Other RABs were formally identified by folks in community with limited attendance spots, but CAG kept meetings open to encourage community to attend. First 3-4 years, CAG met every month then changed to bimonthly which now works well. Meetings can be hard for someone who isn't a group representative because we cover many technical areas during the two-hour meeting. Over time CAG started getting interest from public agencies (Cities of Rancho Cordova and Folsom, and now Sacramento County) as well as participation from water purveyors, particularly Golden States and Sacramento Suburban. J. Heple is involved with the Sacramento

Water Forum, ECOS and Habitat 2020. J. Spearow is involved with Physicians for Social Responsibility, Stephen Green and Burt Hodges are from Save the American River (SARA), and there are additional community members and groups that attend. Goal is to ensure information gets out to greater community.

S. Green: Very pleased to see County representative here because County has not been very involved. Furious that County dropped their lawsuits rather than pursuing them because they had no basis to do that.

J. Spearow: I think it's important to be over protective and involved as a community member. A lot of folks I've talked to are completely unaware that there are any issues at all. Some know there's a cleanup going on, but others don't realize there's a containment operation around the peripheral. There are high concentrations of contaminants still existing in groundwater. I'm concerned that over time the toxicity criteria and cleanup levels may actually become more stringent because of studies being done (referred to article by Dr. Erica Boldenow from 2015) saying if there's effects on fetal heart then you can also have effects on fetal immune system.

Is there interest in having an EPA toxicologist attend to maybe answer questions on some issue you might have on vapor intrusion issues?
J. Heple: At one point when data comes out (maybe in spring).

How long is this going to have to continue because this is just a containment operation?
A. MacDonald: When EPA did the western groundwater, they estimated 250 years (cleanup between inner and outer barriers). Looking at containment for a long time where areas have a million ppb of TCE, you have 100 or more milligrams per liter perchlorate at certain depths, it's not like we have today technology to clean it up quickly. I can't give you dates. When Aerojet changed presidents, they said things were going to move faster, but you can't overcome physics.

With the change in EPA administration, are the things that we're involved with that you guys are working on, are the regulations such that it would take Congress to make shifts in the regulations that are being followed?
J. Santiago-Ocasio: Your guess is as good as ours.
A. MacDonald: Fortunately on this project, you have EPA and the State. If EPA went away tomorrow, it wouldn't be good but we still have the same values and the State would take the lead to ensure those values are met. Not only is it a superfund site, it's a State hazardous waste site.

6. Next Meeting Date

- Wednesday, March 15, 2017 (City Hall, American River South Room)

Acronyms and abbreviations used on this project:

ARAR	Applicable or Relevant and Appropriate Requirements	QA	quality assurance
CAG	Community Advisory Group	RA	remedial action
CEQA	California Environmental Quality Act	RAB	Remedial Advisory Board
DTSC	California Department of Toxic Substances Control	RAP	Remedial Action Plan
EIR	Environmental Impact Report	RCRA	Resource Conservation and Recovery Act
EPA	U.S. Environmental Protection Agency, Region 9	RI	remedial investigation
EW	extraction well	ROD	record of decision
FS	feasibility study	ROI	radius of influence
FYR	Five-Year Review	RPM	remedial project manager
GET	groundwater extraction and treatment	RWP	remedial work plan
IRCTS	Inactive Rancho Cordova Test Site	RWQCB	Regional Water Quality Control Board
HHRA	Human Health Risk Assessment	SIM	selective ion monitoring
HVAC	Heating Ventilation Air Conditioning	SVE	soil vapor extraction
NDMA	N-Nitrosodimetheylamine	SVOC	semi volatile organic compounds
OU	operable unit	TCE	trichloroethylene
PCB	polychlorinated biphenyls	UAO	Unilateral Administrative Order
PCD	Partial Consent Decree	USACE	United States Army Corps of Engineers
PGWSLs	Protection of Groundwater Screening Levels	VI	vapor intrusion
PFC	perflourinated compound	VOCs	volatile organic compounds